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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/838,606	04/19/2001	Timothy M. Schmidl	TI-31457	3520

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EXAMINER

KIM, KEVIN

ART UNIT	PAPER NUMBER ¹
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2634

DATE MAILED: 08/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/838,606

Applicant(s)

SCHMIDL ET AL.

Examiner

Kevin Y Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-10, 12-14, 16, 17 and 19 is/are rejected.
- 7) ☒ Claim(s) 7, 11, 15, 18 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04-19-2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3,5,6,8-10,12,13,14,16,17 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Gerten et al (US 6,760,319).

Consider claims 1 and 16. Gerten et al discloses a frequency hopping communication system, including a Bluetooth system, comprised of a plurality of communication units (20) including a master unit (MASTER) and one or more of slave units. See Fig. 1. Further, Gerten et al teaches a method/system of reducing the number of RF channels used in the frequency hopping sequence, comprising the steps of

- a) determining, by the master unit, channels having interference
- b) communicating the information of the interfering channels to a remote unit so the remote unit is made to avoid using the interfering channels, i.e., “to set up a reduced hopping sequence that uses less RF channels than the standard hopping sequence.” See col. 4, line 48 – 54 in connection with Fig. 3. See col. 2, lines 63- 65 for Bluetooth system.

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Regarding claims 3, 17 and 19, Gerten teaches measuring a received signal strength for identifying channels subject to interference. See col. 5, line 19-24 and Power Measurement Component (66) in Fig.2.

Regarding claim 5, PER is computed by checking CRC information in the header of a received packet.

Regarding claim 6, as described in connection with claim 1, the master sends to the remote unit the channels to be avoided, i.e., "removed."

Regarding claim 8, the master and remote (slave) unit communicates using "the reduced hopping sequence" because communication is performed between the two by using N-M channels, where N is the total number of channels and M is the number of channels to be avoided.

Regarding claim 9, Gerten et al's frequency hopping system includes a Bluetooth system. See col. 2, lines 63- 65.

Regarding claim 10, Gerten et al shows a plurality of mobile (slave) units communication with the master unit. The master unit communicates with a remote unit(s) having interference avoidance capabilities by using a less number of channels when some of channels suffer interference while it communicates with a remote unit(s) without the capabilities by using the normal channels. See col. 4, lines 40-51.

Regarding claim 12, as described above the determining interference channels is performed by the master unit.

Regarding claim 13, Gerten et al teaches that any mobile unit may be adapted to measure interference susceptible channels. See col. 10, lines 24-26.

Regarding claim 14, since channels to be avoided are communicated to the remote unit and the frequency hopping channels constitute the bandwidth, this message is "information on the bandwidth of the RF channels."

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerten et al as applied to claim 1 above, in view of Malmgren et al (US 6,334,057).

Consider claim 2. Gerten et al disclose all the subject matter claimed except for determining interfering channels by measuring the packet error rate (PER) as opposed to the signal strength measurement of Gerten et al. Malmgren et al teach that the PER is also a well known measure of signal quality, in addition to signal strength measurement, for determining

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whether a channel is susceptible to interference. See col. 5, line 59 – col. 6, line 5. PER could provide a better channel measurement because the transmitted data is evaluated. Thus, it would have been obvious to one skilled in the art at the time the invention was made to use the PER in the frequency hopping system of Gerten et al as a better indicator of channels subject to interference.

Regarding claim 4 calling for measuring $E_b/(N_0 + I_0)$ for interference measurement, this is well known a channel quality indicator involving bit error, noise and interference for providing more accurate channel conditions. Thus, it would have been obvious to one skilled in the art at the the time the invention was made to compute use $E_b/(N_0 + I_0)$ for interference measurement in the frequency hopping system of Gerten et al for the purpose of more accurately determining interfered channels that are to be avoided.

Allowable Subject Matter

6. Claims 7, 11,15,18 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y Kim whose telephone number is 703-305-4082. The examiner can normally be reached on 8AM --5PM M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

kvk


CHIEH M. FAN
PRIMARY EXAMINER